

*ERIGERON AND TRIMORPHA (ASTERACEAE: ASTEREA) OF NEVADA*

Guy L. Nesom

Department of Biology, Memphis State University, Memphis, Tennessee  
38152 U.S.A.

Present address:

Department of Botany, University of Texas, Austin, Texas 78713 U.S.A.

ABSTRACT

Thirty four species of *Erigeron* are recorded from the state of Nevada. A key to the species is provided as well as an ecological and distributional summary for each species. One species of *Trimorpha*, *T. lonchophyllus*, is known from Nevada.

KEY WORDS: *Erigeron*, *Trimorpha*, Asteraceae, Astereae, Nevada

Compared to California, Arizona, and Utah, the known composition of the species of *Erigeron* L. in Nevada has changed but little since Cronquist's taxonomic revision of the genus for North America (1947). The study by Tidestrom (1925) is the only one available that provides a treatment bringing the Nevada taxa into narrower focus. The present study provides a key to the Nevada species of *Erigeron*, places on record the geographic distribution by county as well as the habitat and flowering period of each taxon within the state, and serves to update the taxonomy, particularly in parallel with that of neighboring California (Nesom submitted) and Arizona (Nesom submitted), both of which share a number of taxa with Nevada. Discussion of some of the taxonomic decisions are given in a separate paper (Nesom 1992b), particularly where they differ from those previously accepted.

I have segregated *Erigeron* sect. *Trimorpha* (Cass.) DC. as the genus *Trimorpha* Cass. (Nesom 1989). Only one species of *Trimorpha* (*T. lonchophyllus* [Hook.] Nesom) occurs in Nevada, and it is included for convenience in the key and summaries below.

Artificial key to the species of *Trimorpha* and *Erigeron*

- A. Phyllaries commonly 3 nerved; ligules filiform, up to 0.5 mm wide; pappus bristles lengthening at maturity to longer than the involucre. ....  
..... *Trimorpha lonchophyllus*
- A. Phyllaries usually 1 nerved; ligules broader, usually 1-2 mm wide; pappus bristles not lengthening at maturity, not longer than the involucre. ...  
..... *Erigeron* (1)
- 1. Cauline leaves neither clasping nor subclasping. .... (6)
- 1. Cauline leaves clasping to subclasping (slightly auriculate to covering half the stem diameter). .... (2)
  - 2. Involucre conspicuously pubescent, the hairs with black crosswalls in the basal cells; rhizomes long and slender; rays white. *E. coulteri*
  - 2. Involucre glandular but otherwise glabrous or only sparsely hairy; rhizome short and thick if present; rays blue or purple to white or pink. .... (3)
- 3. Rays more than 150, with filiform ligules (less than 0.6 mm wide); phyllaries minutely glandular as well as hairy; peduncles usually conspicuously dilated immediately below the heads; leaves usually shallow crenate. .... *E. philadelphicus*
- 3. Rays 30-80, with broader ligules (mostly 1.5-4.0 mm wide); phyllaries glandular, without other hairs; peduncles not dilated; leaves usually entire. .... (4)
  - 4. Stems and leaves prominently glandular; phyllaries imbricate to subequal; rays white to pink, rarely bluish, sharply deflexing with maturity. .... *E. nauseosus*
  - 4. Stems and leaves mostly eglandular; phyllaries equal to subequal; rays blue to purple, usually coiling at the tips with maturity. . (5)
- 5. Stems closely short strigose beneath the heads, glabrous to very sparsely villous below that, arising from a thick, fibrous rooted, lateral rhizome; phyllaries with loosely spreading or reflexed apices; ligules 2-4 mm wide; achenes 4-7 nerved. .... *E. peregrinus*
- 5. Stems glabrous to sparsely and minutely glandular, arising from a woody, usually erect caudex; phyllaries with relatively stiff, erect apices; ligules ca. 1 mm wide; achenes 2-4 nerved. .... *E. speciosus*

- 6. Pistillate flowers present, with conspicuous, well developed ligules.  
..... (12)
- 6. Pistillate flowers lacking (in *E. inornatus* the outer hermaphroditic  
flowers sometimes may produce abortive stamens and short ligules)  
or if present, ligules lacking or only slightly to not exceeding the  
disc. .... (7)
- 7. Pubescence appressed from base of stem to apex. .... *E. bloomeri*
- 7. Pubescence spreading, at least near the base of stem. .... (8)
- 8. Pistillate flowers present, the ligules absent or greatly reduced. (10)
- 8. Pistillate flowers absent. .... (9)
- 9. Stems 0.5-1.6 dm tall; basal tuft of leaves present at flowering, large and  
usually 3 nerved; pappus bristles 15-25. .... *E. ovinus*
- 9. Stems 1-9 dm tall; basal leaves absent at flowering; pappus bristles 25-60.  
..... *E. inornatus*
- 10. Leaves ternately dissected or lobed. .... *E. compositus*
- 10. Leaves entire. .... (11)
- 11. Stems leafy or merely bracteate, usually branched and bearing more than  
one head, sometimes monocephalous in Lincoln and Mineral cos., hirsute,  
minutely but conspicuously stipitate glandular; disc corollas prominently  
hairy; pappus bristles 7-20, outer pappus of narrow squamellae or con-  
spicuous setae; carpopodium whitish. .... *E. aphanactis*
- 11. Stems scapose, unbranched and monocephalous, hirsute, eglandular; disc  
corollas glabrate; pappus bristles 15-25; outer pappus of inconspicuous  
setae; carpopodium distinctly yellowish. .... *E. austini*
- 12. Stems with appressed or closely ascending pubescence, sometimes  
glabrous. .... (25)
- 12. Stem pubescence spreading, at least above. .... (13)
- 13. Leaves entire or shallowly pinnately lobed. .... (15)
- 13. Leaves 1 to 4 ternately dissected. .... (14)
- 14. Caudex simple or with thick branches; leaves 1 to 4 ternate; phyllar-  
ies in 3-4 series; ligules usually less than 1 mm wide. *E. compositus*
- 14. Caudex with several or numerous slender, rhizomelike branches;  
leaves 1 ternate; phyllaries in 2(3) series; ligules 1-2 mm wide. ...  
..... *E. vagus*

- 15. Plants perennial with woody taproot or fibrous roots. ....(17)
- 15. Plants annual or short lived perennial with slender taproots. ....(16)
  - 16. Stems sparsely pilose with hairs 1-3 mm long, at least on lower part; basal leaves conspicuously lobed, petioles often greater than two thirds the leaf length. ....*E. lobatus*
  - 16. Stems moderately hirsute with hairs less than 1 mm long; basal leaves entire to toothed, petioles less than two thirds the leaf length. ....*E. divergens*
- 17. Plants (10-)20-55 cm tall with numerous, relatively evenly distributed cauline leaves; basal cluster of leaves absent at flowering. ...*E. breweri*
- 17. Plants 2-25 cm tall (up to 30 cm in *E. algidus*) with reduced cauline leaves; basal cluster of leaves persistent. ....(18)
  - 18. Plants with fibrous roots; rays often enrolling at the tips at maturity. ....*E. algidus*
  - 18. Plants with a taproot; rays straight or sharply deflexing at maturity. ....(19)
- 19. Ray flowers 10-50; disc corollas without a strongly inflated or indurated portion; outer pappus essentially lacking or of inconspicuous squamellae. ....(21)
- 19. Ray flowers 50-110; disc corollas strongly inflated and indurated in the lower third of the tube; outer pappus of conspicuous scales, squamellae or setae. ....(20)
  - 20. Disc corollas scabrous-puberulent with sharp pointed trichomes; pappus bristles 5-15; outer pappus of very broad scales or squamellae. ....*E. concinnus*
  - 20. Disc corollas glabrous to sparsely pubescent with blunt tipped trichomes; pappus bristles 12-22; outer pappus of shortened bristles, narrow squamellae, or a combination of the two. ....*E. pygmaeus*
- 21. Leaf blades hairy but eglandular or inconspicuously glandular. ....(23)
- 21. Stems and leaf blades heavily and conspicuously glandular as well as hairy. ....(22)
  - 22. Stems scapose, pubescent with hairs 0.3-0.7 mm long; involucre 4-7 mm high; ligules 4-7 mm long. ....*E. pygmaeus*

22. Stems leafy or bracteate, pubescent with hairs 1.0-2.2 mm long; involucre 7.5-10.5 mm high; ligules 7-10 mm long. .... *E. latus*
23. Caudex usually simple, sometimes with a few short, thick branches; basal leaves entire or rarely toothed, prominently 3 nerved. .... *E. jonesii*
23. Caudex usually conspicuously branched; basal leaves entire, 1 nerved (rarely and inconspicuously 3 nerved in *E. clokeyi*). .... (23)
24. Plants 1-5 cm tall; stems scapose, appressed pubescent on the lower half, woolly immediately below heads; leaves appressed pubescent. .... *E. uncialis*
24. Plants 2-20 cm tall; stems leafy or bracteate, all spreading pubescent, not woolly below heads; leaves spreading pubescent. .... (25)
25. Taproot and caudex branches slender; leaves spatulate to oblanceolate with the blade clearly differentiated from the petiole. . *E. asperugineus*
25. Taproot and caudex branches thick; leaves oblanceolate with the blade slightly or not at all differentiated from the petiole region. .. *E. clokeyi*
26. Leaf bases white cartilaginous, cylindrically enclosing the lower portion of the stem; ligules yellow. .... *E. linearis*
26. Leaf bases greenish, or if whitish not cartilaginous and enclosing the stem as a cylinder; ligules blue, purple, white, or pink. .. (27)
27. Plants annual; heads first produced on scapiform stems, later on leafy, spreading runners. .... *E. flagellaris*
27. Plants perennial; all heads produced on erect stems, no runners produced. .... (28)
28. Plants densely caespitose; stems scapose; achenes glabrous except along the two ribs. .... *E. compactus*
28. Plants much less compact in habit; stems leafy or bracteate; achene faces sparsely to densely pubescent. .... (29)
29. Stems finely strigillose, whitish toward the base because of much denser pubescence there; leaves linear to filiform. .... *E. filifolius*
29. Stems with pubescence of nearly equal density from top to base; at least basal leaves oblanceolate to obovate. .... (30)
30. Plants with an obvious taproot or root-caudex system with a long central axis; leaf blades strigose, hirsute, or glabrous to glabrate. .... (32)

30. Plants with caudex of slender branches, lacking a taproot or root/caudex system with a long central axis; leaf blades glabrous or very sparsely strigose. .... (31)
31. Caudex branches producing fibrous roots; stem base purplish; phyllaries green, equal to subequal, glandular and usually with a few hairs; ligules often coiling at the tips at maturity. .... *E. ursinus*
31. Caudex branches not producing fibrous roots; stem base green; phyllaries purplish, imbricate, glandular but without other hairs; ligules sharply deflexing at maturity. . .... *E. leiomerus*
32. Leaf blades strigose or hirsute; phyllaries in 3-4 series, strigose or hirsute. .... (34)
32. Leaf blades glabrous to glabrate; phyllaries in 1-2 series, glandular, otherwise with few or no hairs. .... (33)
33. Plants with taproot and a simple or slightly branched caudex; branches decumbent-ascending; ligules 4-6 mm long, white to pink. . *E. watsonii*
33. Plants with long, slender caudex branches; branches erect-ascending; ligules 6-11 mm long, blue or rarely white. .... *E. leiomerus*
34. Plants 3-15 cm tall; involucre 6-12 mm wide (pressed), 3.5-5.0 mm high; disc corollas 2.7-4.2 mm long. .... *E. tener*
34. Plants 9-40 cm tall; involucre 10-20 mm wide (pressed), 5.5-10 mm high; disc corollas 3.8-6.5 mm long. .... (35)
35. Stems light green at the base; basal leaves 1 nerved, silvery strigose; phyllaries strongly unequal, densely and closely appressed pubescent; ligules often coiling at the tips at maturity; achenes 6-8 nerved. *E. argentatus*
35. Stems often purplish at the base; basal leaves 3 nerved, greenish, usually hirsute, less commonly strigose; phyllaries subequal to unequal, villous-hirsute; ligules remaining straight at maturity; achenes 2(-3) nerved. . .  
 . .... *E. eatonii*

*Trimorpha lonchophyllus* (Hook.) Nesom

Douglas, Elko, Esmeralda, Eureka, Humboldt, Lyon, Mineral, Nye, Washoe, and White Pine cos.; 4500-9000 ft, moist or wet soil in meadows or along creeks, sagebrush up to yellow pine and subalpine, June-September. Alaska south to

British Columbia and Quebec, south in the western U.S.A. to California, Arizona, and north central New Mexico.

1. *Erigeron algidus* Jepson [*E. petiolaris* E. Greene; non Vierh., 1906]

Washoe Co. (Mt. Rose); ca. 9500-10500 ft, rocky meadows, alpine or near timberline, July-August. Sierra Nevada of southeastern California.

2. *Erigeron aphanactis* (A. Gray) E. Greene

A. Stems leafy, with several heads. .... var. *aphanactis*

A. Stems scapose, monocephalous. .... var. *congestus*

*Erigeron aphanactis* (A. Gray) E. Greene var. *aphanactis* [*E. concinnus* (Hook. & Arn.) Torr. & Gray var. *aphanactis* A. Gray]

Carson City, Churchill, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral. Nye, Pershing, Storey, Washoe, and White Pine cos.; (4000-)4500-9500 ft, dry, sandy or rocky soil, greasewood, sagebrush, pinyon-juniper, or yellow pine, April-September. Southwestern Colorado, western New Mexico, northern Arizona, Utah, southeastern Oregon, and California.

*Erigeron aphanactis* (A. Gray) E. Greene var. *congestus* (E. Greene) Cronq.

Lincoln and White Pine cos.; ca. 4500-6000 ft, dry sandy habitats, May-September. Southern California to south central Utah.

3. *Erigeron argentatus* A. Gray

Clark, Elko, Esmeralda, Eureka, Lincoln, Nye, and White Pine cos.; 5500-8500 ft, ridges and slopes in dry, sandy or gravelly soil, sagebrush, mountain mahogany, juniper, or pinyon-juniper, May-July. Western Utah and Inyo Co., California.

*Erigeron utahensis* A. Gray was reported by Munz (1959) to occur in Nevada, but no collections have been observed during this study. It is similar to *E. argentatus*, differing most conspicuously by having basal leaves deciduous or withered by flowering time and 4(-6) nerved achenes. If present, it would be

expected in Clark Co., adjacent to its locality in the Providence Mts. of San Bernardino Co., California. Elsewhere, it occurs in southern Utah, northern Arizona, and southwestern Colorado.

4. *Erigeron asperugineus* (D.C. Eat.) A. Gray

Elko and White Pine cos.; 7000-10300 ft, rocky or gravelly, often dry slopes, sagebrush or meadow edges, July-August. Central Idaho.

5. *Erigeron bloomeri* A. Gray [*E. bloomeri* A. Gray var. *pubens* Keck]

Carson City, Churchill, Douglas, Elko, Humboldt, Lander, Lyon, Mineral, Nye, Pershing, Washoe, and White Pine cos.; 4900-8400(-9700) ft, dry, sandy or rocky soil, sagebrush, sagebrush-mountain mahogany, pinyon-juniper, or yellow pine, May-July. Central Washington, Idaho, and northern California. All Nevada plants are var. *bloomeri*, which is highly variable in the amount of its involucre indument; the var. *nudatus* (A. Gray) Cronq. occurs in southwestern Oregon and northwestern California.

6. *Erigeron breweri* A. Gray

A complex species occurring from Oregon through California and Nevada into northern Baja California. Two of the seven varieties occur in Nevada.

A. Involucre hispidulous and glandular; phyllaries relatively narrow, long acuminate, without evident *Aster*-like green tips. ... var. *porphyreticus*

A. Involucre merely glandular; at least the inner phyllaries relatively broad, abruptly acute or acuminate, usually with *Aster*-like green tips. ....  
 ..... var. *breweri*

*Erigeron breweri* A. Gray var. *breweri*

Carson City, Douglas, Mineral, and Washoe cos.; 5900-9500 ft, open, rocky sites, June-September. East central to southeastern California.

*Erigeron breweri* A. Gray var. *porphyreticus* (M.E. Jones) Cronq.

Douglas, Esmeralda, Humboldt, Lander, Lyon, Mineral, Nye, Pershing, and Washoe cos.; 4500-9000(-10200) ft. dry, rocky soil or commonly in crevices or on ledges, sagebrush, pinyon-juniper, or yellow pine, May-September. Southeastern California. Intermediates are common between the two varieties; the key characters do not appear to be strongly correlated in their presence.

7. *Erigeron chrysopsidis* A. Gray

Elko, Eureka, Humboldt, and Washoe cos., 4900-6730 ft, gravelly soil, sagebrush or juniper, May-June. Southwestern Idaho, southeastern Oregon, and northeastern California. All Nevada plants are var. *austiniae* (E. Greene) Nesom [*E. austiniae* E. Greene]; these also comprise *E. chrysopsidis* subsp. *austiniae* (E. Greene) Cronq.; subsp. *chrysopsidis* comprises two varieties from Oregon and Washington (Nesom 1992b).

8. *Erigeron clokeyi* Cronq.

Clark, Esmeralda, Lander, Lyon, Mineral, Nye, and White Pine cos.; 8000-11500 ft, dry, rocky habitats, sometimes with sagebrush or mountain mahogany, common in treeless areas but often with yellow, bristlecone, or limber pine, June-September. Beaver Co., Utah, and eastern California.

9. *Erigeron compactus* S.F. Blake

Elko, Esmeralda, Eureka, Nye, and White Pine cos.; 4800-7200 ft, dry, sandy or rocky soil, sagebrush or pinyon-juniper, May-June. Northwestern Utah and Inyo Co., California. *Erigeron consimilis*, which has been considered a variety of *E. compactus*, is justifiably recognized as a separate species (Nesom 1991).

10. *Erigeron compositus* Pursh [*E. compositus* Pursh var. *glabratus* Macoun; *E. compositus* Pursh var. *discoideus* A. Gray]

Douglas, Elko, Humboldt, Lander, Mineral, Nye, Washoe, and White Pine cos.; 6000-11300 ft, rocky or gravelly habitats, often talus, sagebrush or mountain mahogany at lower elevations, May-September. Alaska and Greenland south to British Columbia and Quebec, California, and in the Rocky Mountains to Colorado and northern Arizona. Plants identified as var. *discoideus* A. Gray, with the largest leaves mostly once ternate, sometimes with an extra pair or small lobes below the larger ones, are known only from the Snake Range of White Pine Co. and the Toiyabe Mts. of Nye Co., but plants with typically 2-3 ternately divided leaves also occur in these areas. Previously recognized taxa based solely on leaf morphology apparently are artificial (see Nesom 1992b for further comments).

11. *Erigeron concinnus* (Hook. & Arn.) Torr. & Gray

A. Stems conspicuously leafy, branched and several headed, (4)7-15(-24) cm tall. .... var. *concinnus*

A. Stems scapose or nearly so, monocephalous, 3-9(-15) cm tall. ....  
..... var. *condensatus*

*Erigeron concinnus* (Hook. & Arn.) Torr. & Gray var. *concinnus* [*E. pumilus* Nutt. subsp. *concinoides* Cronq.]

Clark, Elko, Esmeralda, Eureka, Lincoln, Nye, and White Pine cos.; 3400-8000 ft, dry soil, greasewood-blackbrush, sagebrush), or pinyon-juniper, April-June(-August). Southeastern California (Inyo and San Bernardino cos.), southeastern Idaho, southwestern Wyoming, Utah, northern Arizona and New Mexico, and western Colorado.

*Erigeron concinnus* (Hook. & Arn.) Torr. & Gray var. *condensatus* D.C. Eat.

Clark, Elko, Eureka, Lincoln, and White Pine cos. but particularly abundant in the latter; Elko, Lincoln, Nye, and White Pine cos.; 5200-7900 ft, sagebrush, juniper, and pinyon-juniper, May-July. Northwestern New Mexico, central Utah, and Wyoming. Var. *condensatus* is not well defined geographically, and intermediates between it and var. *concinnus* are common.

12. *Erigeron coulteri* Porter

Carson City, Douglas, and Washoe cos.; 6200-10000 ft, moist or marshy areas in subalpine meadows or along stream banks, July-September. The population system in e.-central California, including the adjacent Douglas Co. plants, apparently is significantly disjunct from the main range of the species: northeastern Oregon, n. Idaho to Wyoming, northeastern Utah, Colorado, and northern New Mexico.

13. *Erigeron divergens* Torr. & Gray

Carson City, Clark, Douglas, Esmeralda, Eureka, Lincoln, Lyon, Nye, Storey, Washoe, and White Pine cos.; 200-7400(-8800) ft, meadows or disturbed sites, saltbush, blackbrush, sagebrush, pinyon-juniper, or yellow pine, late April-August(-September). Widespread in the western U.S.A.: western North Dakota, South Dakota, to British Columbia, south to California, Arizona, New Mexico, and southwestern Texas; northwestern México.

14. *Erigeron eatonii* A. Gray

A. Phyllaries distinctly granular glandular; achenes 1.7-2.4 mm long.  
 ..... var. *eatonii*

A. Phyllaries hairy but not at all glandular; achenes 2.8-3.2 mm long.  
 ..... (B)

B. Phyllaries 7.0-10.5 mm long, 4.7-6.6 times longer than wide;  
 ray floret lamina 7-11 mm long; disc florets 4.4-6.8 mm long. .  
 ..... var. *nevadincola*

B. Phyllaries 4.5-8.0 mm long, 3.8-5.5 times longer than wide;  
 ray floret lamina 4.5-6.6(-8.5) mm long; disc florets 3.5-5.0 mm  
 long. .... var. *sonnei*

*Erigeron eatonii* A. Gray var. *eatonii*

Clark Co., where known from a single collection (*Tiehm 11256*, NSMC!) in the Virgin Mts. near the Utah border; 7400 ft, rocky slopes with *Cercocarpus*, May-June. Utah and north central Arizona to Colorado, Wyoming, south central Montana and southeastern Idaho.

*Erigeron eatonii* A. Gray var. *nevadincola* (S.F. Blake) Nesom [*E. nevadincola* S.F. Blake]

Carson City, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Nye, Pershing, Storey, and Washoe cos.; 4800-8700(-10000) ft, gravelly or rocky soil, sagebrush or pinyon-juniper, April-July(-September). Lassen and Sierra cos., California.

*Erigeron eatonii* A. Gray var. *sonnei* (E. Greene) Cronq., *ined* [*E. sonnei* E. Greene]

Lyon, Nye, and Washoe cos.; 5950-9250 ft, open, grassy or rocky habitats, often with sagebrush, May-September. Adjacent east central California.

15. *Erigeron filifolius* Nutt.

Carson City, Humboldt, and Washoe cos.; 5800-7700 ft, dry, rocky or sandy soil, sagebrush, bitterbrush, juniper, or yellow pine, June-August. Eastern California, Washington, Oregon, Idaho, northern Utah, northwestern Montana, and southern British Columbia. All Nevada plants are var. *filifolius*; the var. *robustior* Peck occurs in south central Washington and north central Oregon. Attribution of the epithet's authorship solely to Nuttall (Cronquist 1947) is justifiable.

16. *Erigeron flagellaris* A. Gray

Clark and Nye cos.; 7200-8300 ft, meadows or grassy slopes, often moist, commonly with yellow pine, June-July. South Dakota, Wyoming, disjunct in southern British Columbia, south to Arizona and southwestern Texas; northern México. Some of the plants of the large sample represented by *Clokey* 7746 (Clark Co.) have spreading or ascending rather than appressed stem pubescence. They are best represented taxonomically as *E. flagellaris*, but the variation probably reflects genes introgressant from *E. divergens*.

17. *Erigeron inornatus* (A. Gray) A. Gray

Washoe Co., 5000-6400 ft, dry, rocky habitats, often in sandy soil, July-September. Southeastern Washington, Oregon, and northern and southeastern California. All Nevada plants are var. *inornatus*; two other varieties occur in California. Peculiar variants in this species and possible hybrids with *Erigeron breweri* occur in Washoe Co. (Nesom 1992a).

18. *Erigeron jonesii* Cronq.

Elko, Lincoln, Nye, and White Pine cos.; 6000-10800 ft, rocky, rocky, sandy, or loamy soil on open, grassy slopes, often with sagebrush or mountain mahogany, sometimes pinyon-juniper, May-August(-September). Western Utah and Oneida Co. in southeastern Idaho.

19. *Erigeron latus* (Nels. & Macbr.) Cronq.

Elko Co. (northern part); 5200-6700 ft, gravelly soil or rock outcrops with sagebrush, June-July. Owyhee Co. in southwestern Idaho.

20. *Erigeron leiomerus* A. Gray

Elko, Lincoln, Nye, and White Pine cos.; 8600-11200 ft, rocky or gravelly habitats, June-September. Southern Idaho, Wyoming, western Colorado, northern Utah, and north central New Mexico.

21. *Erigeron linearis* (Hook.) Piper

Elko, Humboldt, and Washoe cos.; 4450-7300(-8700) ft, dry, rocky or gravelly soil, usually sagebrush or bitterbrush, May-July(-August). Eastern California, Washington, Oregon, western Wyoming and Montana, and southern British Columbia.

22. *Erigeron lobatus* A. Nels.

Valley of Fire in Clark Co.; 2000-2500 ft, sandy soil, March-April. Southern and western Arizona, southeastern California; northwestern México (Sonora).

23. *Erigeron nauseosus* (M.E. Jones) A. Nels.

Snake Range of White Pine Co., and Panaca (Pioche) Hills of Lincoln Co.; (5500-)8500-11500 ft, dry, rocky or sandy soil, talus, or cliff ledges or crevices, pinyon-juniper, oak, or spruce and aspen, May-August. West central Utah.

24. *Erigeron ovinus* Cronq.

Endemic to the Sheep Mountains of Clark Co. and Mt. Irish of the Groom Range in Lincoln Co.; ca. 7000-8000 ft, rock crevices, pinyon-juniper, yellow pine, or fir, June-July.

25. *Erigeron peregrinus* (Banks ex Pursh) E. Greene

A. Peduncles appressed or ascending pubescent; leaves glabrous to short villous. .... var. *callianthemus*

A. Peduncles spreading hirsute; leaves hirsute on both surfaces. .... var. *hirsutus*

*Erigeron peregrinus* (Banks ex Pursh) E. Greene var. *callianthemus* (E. Greene) Cronq. [*E. peregrinus* (Banks ex Pursh) E. Greene var. *angustifolius* (A. Gray) Cronq.; *E. peregrinus* (Banks ex Pursh) E. Greene var. *scaposus* (Torr. & Gray) Cronq.]

Douglas, Elko, Humboldt, Storey, and Washoe cos.; 7000-10000 ft, moist or wet meadows, sometimes dry grassy slopes, open or under pine or fir, July-September. British Columbia and Alberta, south to eastern California, Utah, and north central New Mexico. All Nevada plants of *E. peregrinus* are part of subsp. *callianthemus* (E. Greene) Cronq.

*Erigeron peregrinus* (Banks ex Pursh) E. Greene var. *hirsutus* Cronq.

Mineral Co. (Aurora); ca. 8500 ft, grassy slopes, July-August. Adjacent east central to south central California.

26. *Erigeron philadelphicus* L.

Washoe Co., where known from a single collection (*Tiehm 10642*, NSMC!); 4500 ft, moist creek bank, June. Native to the eastern U.S.A. but widely scattered in the West; expected in other moist Nevada localities at moderate elevations.

27. *Erigeron pumilus* Nutt. [*E. pumilus* Nutt. var. *gracilior* Cronq.]

Carson City, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Mineral, and Washoe cos.; 4600-7600(-9100) ft, moist or dry soil, meadows or sagebrush, May-August. Southern British Columbia, Washington, Oregon, northeastern California, Idaho, western Montana, northwestern Wyoming, and north central Utah. All Nevada plants are var. *intermedius* Cronq.; the var. *pumilus* occurs east of the continental divide.

28. *Erigeron pygmaeus* (A. Gray) E. Greene

Esmeralda, Lyon, and Washoe cos.; ca. 10000-11900 ft, rocky ridges or slopes, often talus, above timberline or sometimes subalpine, July-August. Sierra Nevada of east central California.

29. *Erigeron speciosus* (Lindl.) DC. [*E. macranthus* Nutt.; *E. speciosus* (Lindl.) DC. var. *macranthus* (Nutt.) Cronq.]

Elko and Humboldt cos.; 6200-7500 ft, dry or moist, gravelly or loamy soil, yellow pine, July-August. Southern British Columbia and Alberta, south to Oregon, Idaho, Montana, western New Mexico, and Arizona; disjunct in northern Baja California.

30. *Erigeron tener* (A. Gray) A. Gray

Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Mineral, Nye, Pershing, and White Pine cos.; 5800-10600(-11300) ft, rocky or gravelly habitats, often in talus cliff ledges or crevices, or ridgetops, *Atriplex*, sagebrush, pinyon-juniper, yellow pine, or bristlecone pine, limber pine, or spruce, June-September. Eastern California, southern Oregon and Idaho, southwestern Montana, western Wyoming, and northern Utah.

31. *Erigeron uncialis* S.F. Blake

A. Lower stems with mostly appressed or ascending pubescence, spreading near the heads. .... var. *conjugans*

A. Upper and lower stems with spreading-hirsute pubescence. ....  
..... var. *uncialis*

*Erigeron uncialis* S.F. Blake var. *conjugans* S.F. Blake [*E. uncialis* S.F. Blake subsp. *conjugans* (S.F. Blake) Cronq.]

Endemic to Clark, Lincoln, and Nye cos.; 7300-9200 ft, crevices in limestone cliffs and boulders, yellow pine or limber pine, May-August.

*Erigeron uncialis* S.F. Blake var. *uncialis* [*E. cavernensis* Welsh & Atwood]

Nye and White Pine cos.; 9500-11100 ft, limestone ridges, outcrops, and cliffs, June-July. Eastern Inyo and eastern San Bernardino cos., California.

32. *Erigeron ursinus* D.C. Eat.

White Pine Co.; ca. 8000-9950 ft, sagebrush-grassland, subalpine meadows, July-August. Eastern Idaho, central Montana, Wyoming, Colorado, Utah, and northern Arizona.

33. *Erigeron vagus* Payson

Elko Co.; 10500-13000 ft, usually in alpine talus, June-August. East central California, scattered populations in Oregon, Colorado, and Utah.

34. *Erigeron watsonii* (A. Gray) Cronq.

Elko Co. and the Snake Range of White Pine Co.; 8200-11000 ft, moist or dry, gravelly or rocky soil on slopes, July-September. Western Utah and the Albion Mts. of Cassia Co. in south central Idaho.

## ACKNOWLEDGMENTS

The Memphis State address is given first since the greatest part of this study was completed during my employment there. I thank the staffs of RENO and NSMC for loans of specimens; other collections have been studied from various herbaria, particularly CAS and UC. Ann Pinzl (NSMC) has been especially helpful during several stages of this study in bringing recent Nevada collections to my attention and providing much other detailed and critical information. I am also grateful to B.L. Turner for his review of the manuscript; A. Cronquist commented on an early version (1988) and J. Kartesz made several suggestions regarding nomenclature.

## LITERATURE CITED

- Cronquist, A. 1947. Revision of the North American species of *Erigeron*, north of Mexico. *Brittonia* 6:121-302.
- Munz, P.A. 1959. *A California Flora*. Univ. California Press, Berkeley, California.
- Nesom, G.L. 1989. Infrageneric taxonomy of New World *Erigeron* (Compositae: Astereae). *Phytologia* 67:67-93.
- . 1991. A new species of *Erigeron* (Asteraceae: Astereae) from northwestern New Mexico. *Phytologia* 71:416-419.
- . 1992a. Revision of *Erigeron* sect. *Linearifolii* (Asteraceae: Astereae). *Phytologia* 72:157-208.
- . 1992b. Taxonomic notes on *Erigeron* (Asteraceae: Astereae) of California, Nevada, and Arizona. *Phytologia* 73:186-202.
- . Submitted. *Erigeron*, in *Jepson's Manual of the California Flora*, J. Hickman (ed.).
- . Submitted. *Erigeron*, in *Vascular Plants of Arizona*.
- Tidestrom, I. 1925. *Flora of Utah and Nevada*. Contr. U.S. Natl. Herb. 25:1-665.